In the Claims

The status of claims in the case is as follows:

1   1.   [Currently amended] Method for evaluating a network,

2   comprising the steps of:

3   measuring average message delay through said network;

4   determining ~~the standard deviation~~ <u>a standard deviation</u>

5   of said message delay; and

6   calculating ~~the discrete~~ <u>a discrete</u> utilization of said

7   network as ~~the ratio~~ <u>a ratio</u> of said average message

8   delay to said standard deviation.

1   2.   [Original] The method of claim 1, further comprising

2   the steps of:

3   factoring instances of dropped messages as full

4   utilization in calculating said discrete utilization.

1   3.   [Currently amended] Method for evaluating a network,

2   comprising the steps of:

3   communicating of a plurality of long packets and short

4   packets through said network;

5   determining ~~the best time~~ <u>a best time</u> of said long

6   packets;

7   determining ~~the best time~~ <u>a best time</u> of said short

8   packets;

9   responsive to ~~the length~~ <u>a length</u> of said long and

10   short packets and their respective best times,

11   determining ~~network~~ Network Queue Wait Time (Tw) and

12   ~~the standard deviation~~ <u>a standard deviation</u> of Network

13   Queue Wait Time, (σTw);

14   responsive to said Tw and σTw, calculating ~~the discrete~~

15   <u>a discrete</u> utilization (p) of said network.

1   4.   [Original]   The method of claim 3, wherein said Tw, σTw

2   and p are related by the expression:

3

4    $$Tw / \sigma Tw = p / \sqrt{(p * (2 - p))}$$.

1   5.   [Currently amended]   Method for evaluating a network,

2   comprising the steps of:

3   sending test packets across said network;

4   ~~responsive to said test packets~~ based upon number of

5   test packets transmitted, number of bytes per test

6   packet, send and receive timestamps of each test

7   packet, and number of test packets lost in

8   transmission, deducing ~~the capacity~~ a capacity of said

9   network, its latency, and ~~the current~~ a current

10   utilization of said capacity.

1   6.   [Currently amended]   The method of claim 5, further

2   comprising the steps of:

3   calculating network hop count as a measure of ~~the~~

4   ~~minimum number~~ a minimum number of hops of network

5   bottleneck hop speed that could be in the ~~actual~~

6   network; and

7   responsive to said network hop count, determining the

8   minimum network discrete utilization.

1   7.   [Currently amended] The method of claim 6, further

2   comprising the steps of:

3   responsive to said test packets, determining as a

4   maximum network discrete utilization ~~the number~~ a

5   <u>number</u> of messages queued per network hop count; and

6   responsive to said minimum network discrete utilization

7   and said maximum network discrete utilization,

8   determining a best approximation of end to end discrete

9   utilization.

10   8.   [Original] The method of claim 7, further comprising

11   the step of:

12   adjusting said end to end discrete utilization for

13   dropped test packets.

1   9.   [Currently amended] The method of claim 7, said best

2   approximation of end to end discrete utilization being ~~the~~

3   ~~average~~ <u>an average</u> of said minimum network discrete

4   utilization and said maximum network discrete utilization.

1   10. [Original] The method of claim 7, further comprising

2   the step of:

3   adjusting said best approximation of end to end

4   discrete utilization by selectively weighting said

5   minimum network discrete utilization or said maximum

6   network discrete utilization responsive to network

7   streaming utilization.

1   11. [Currently amended] A method for evaluating network

2   characteristics, comprising the steps of

3   determining network <u>discrete</u> utilization;

4   determining average message service time; and

5   calculating ~~the standard deviation~~ <u>a standard deviation</u>

6   of network queue wait time (σTw) = square root of

7   (utilization * (2- utilization)) * (average message

8   service time / (1 - utilization).

1   12. [Original] The method of claim 11, further comprising

2   the step of

3   determining Tw = utilization * average message service

4   time / (1 - utilization).

1   13. [Currently amended] A method for evaluating ~~the~~

2   ~~discrete~~ <u>a discrete</u> utilization of a network, comprising the

3   steps of

4   transmitting <u>probative samples</u> through said network ~~and~~

5   ~~time stamping probative samples~~;

6   <u>time stamping said probative samples</u>; and

7   responsive to said samples, calculating the average

8   wait time and ~~the standard deviation~~ <u>a standard</u>

9   <u>deviation</u> of average delay of said network.

1   14. [Original] The method of claim 13, said samples

2   comprising one way echo packets.

1   15. [Original] The method of claim 13, said samples

2   comprising two way echo packets.

1   16. [Currently amended] The method of claim 13 for

2   deriving the discrete utilization of a network, further

3   comprising the steps of:

4   deriving said discrete utilization as ~~the ratio~~ <u>a ratio</u>

5   of ~~the wait~~ <u>a wait</u> time of said network to ~~the standard~~

6   ~~deviation~~ <u>a standard deviation</u> of the average ~~queue~~

7   wait time.

1   17.   [Original]   The method of claim 16, further comprising

2   the steps of:

3   fine tuning said discrete utilization by averaging

4   dropped instances of said samples with successful

5   transmissions of said samples to derive a measure of

6   discrete utilization based upon a total set of said

7   probative samples.

1   18.   [Currently amended]   ~~System~~ <u>A program storage device</u>

2   <u>readable by a machine, tangibly embodying a program of</u>

3   <u>instructions executable by a machine</u> for evaluating a

4   network, comprising:

5   an apparent network speed analysis application <u>module</u>

6   for measuring average message delay through said

7   network[[;]]<u>,</u> determining ~~the standard deviation~~ <u>a</u>

8   standard deviation of said message delay[[;]]‚ and

9   calculating ~~the discrete~~ a discrete utilization of said

10   network as ~~the ratio~~ a ratio of said average message

11   delay to said standard deviation; and

12   a service level and capacity planning routine module

13   for tuning said network.

1   19. [Currently amended] The ~~system~~ program storage device

2   of claim 18, said service level and capacity planning

3   routine module further comprising routines for calculating

4   change in network traffic before network response time

5   service level is compromised[[;]]‚ determining additional

6   file load capacity of the network[[;]]‚ and adjusting window

7   size for file transfer to fill remaining capacity.

1   20.   [Currently amended]   ~~System~~ A program storage device

2   readable by a machine, tangibly embodying a program of

3   instructions executable by a machine for evaluating a

4   network, comprising:

5   a first program module for measuring average message

6   delay through said network;

7   a second program module for determining ~~the standard~~

8   ~~deviation~~ <u>a standard deviation</u> of said message delay;

9   and

10   a third program module for calculating ~~the discrete~~ <u>a</u>

11   <u>discrete</u> utilization of said network as ~~the ratio~~ <u>a</u>

12   <u>ratio</u> of said average message delay to said standard

13   deviation.

1   21.   [Currently amended] A program storage device readable

2   by a machine, tangibly embodying a program of instructions

3   executable by a machine to perform method steps for

4   evaluating a network, said method steps comprising:

5   measuring average message delay through said network;

6   determining ~~the standard deviation~~ <u>a standard deviation</u>

7   of said message delay; and

8   calculating ~~the discrete~~ <u>a discrete</u> utilization of said

9   network as ~~the ratio~~ <u>a ratio</u> of said average message

10   delay to said standard deviation.

1   22.   [Currently amended] A <u>program storage device readable</u>

2 ~~by a machine, tangibly embodying a program of instructions~~

3 ~~executable by a machine to perform operations comprising~~

4 ~~computer program product or computer program element for~~

5 ~~performing the steps of~~:

6   measuring average message delay through said network;

7   determining ~~the standard deviation~~ a standard deviation

8   of said message delay; and

9   calculating ~~the discrete~~ a discrete utilization of said

10   network as ~~the ratio~~ a ratio of said average message

11   delay to said standard deviation.

1   23. [New] A method for evaluating a discrete utilization

2 of a network, comprising the steps of

3   transmitting probative samples through said network;

4   time stamping said probative samples;

5   responsive to said samples, calculating the average

6   wait time and a standard deviation of average delay of

7   said network; and

8   deriving said discrete utilization as a ratio of a wait

9   time of said network to a standard deviation of the

10   average wait time.

1   24. [New] The method of claim 23, further comprising the

2   steps of:

3   fine tuning said discrete utilization by averaging

4   dropped instances of said samples with successful

5   transmissions of said samples to derive a measure of

6   discrete utilization based upon a total set of said

7   probative samples.

1   25. [New] The program storage device of claim 21, said

2   steps further comprising:

3   factoring instances of dropped messages as full

4   utilization in calculating said discrete utilization.

1   26. [New] A program storage device readable by a machine,

2   tangibly embodying a program of instructions executable by a

3   machine to perform operations for evaluating a network, said

4   operations comprising:

5   communicating of a plurality of long packets and short

6   packets through said network;

7   determining a best time of said long packets;

8   determining a best time of said short packets;

9   responsive to of said long and short packets and their

10   respective best times, determining Network Queue Wait

11   Time (Tw) and a standard deviation of Network Queue

12   Wait Time, (σTw);

13   responsive to said Tw and σTw, calculating a discrete

14   utilization (p) of said network.

1   27. [New] The program storage device of claim 3, wherein

2   said Tw, σTw and p are related by the expression:

3

4

$$Tw / \sigma Tw = p / \sqrt{(p * (2 - p))} \quad .$$

1   28. [New] A program storage device readable by a machine,

2   tangibly embodying a program of instructions executable by a

3   machine to perform operations for evaluating a network, said

4   operations comprising:

5   sending test packets across said network;

6   based upon number of test packets transmitted, number
7   of bytes per test packet, send and receive timestamps
8   of each test packet, and number of test packets lost in
9   transmission, deducing a capacity of said network, its
10   latency, and a current utilization of said capacity.

1   29. [New] The program storage device of claim 28, said
2   operations further comprising:

3   calculating network hop count as a measure a minimum
4   number of hops of network bottleneck hop speed that
5   could be in the network; and

6   responsive to said network hop count, determining the
7   minimum network discrete utilization.

1   30. [New] The program storage device of claim 29, said
2   operations further comprising:

3   responsive to said test packets, determining as a

4   maximum network discrete utilization a number of

5   messages queued per network hop count; and

6   responsive to said minimum network discrete utilization

7   and said maximum network discrete utilization,

8   determining a best approximation of end to end discrete

9   utilization.

1   31.   [New]   The program storage device of claim 30, said

2   operations further comprising:

3   adjusting said end to end discrete utilization for

4   dropped test packets.

1   32.   [New]   The program storage device of claim 30, said

2   best approximation of end to end discrete utilization being

3   an average of said minimum network discrete utilization and

4   said maximum network discrete utilization.

1   33.   [New]   The program storage device of claim 30, said

2   operations further comprising:

3   adjusting said best approximation of end to end

4   discrete utilization by selectively weighting said

5   minimum network discrete utilization or said maximum

6   network discrete utilization responsive to network

7   streaming utilization.

1   34. [New] A program storage device readable by a machine,

2   tangibly embodying a program of instructions executable by a

3   machine to perform operations for evaluating network

4   characteristics, comprising the steps of

5   determining network discrete utilization;

6   determining average message service time; and

7   calculating a standard deviation of network queue wait

8   time (σTw) = square root of (utilization * (2-

9   utilization)) * (average message service time / (1 -

10   utilization).

1   35. [New] The program storage device of claim 34, said

2   operations further comprising:

3   determining Tw = utilization * average message service

4   time / (1 - utilization).